

Mapping Bamboo in Berangkat Forest Reserve, Kelantan, Malaysia using Airborne Hyperspectral Imaging Sensor

ABSTRACT

Bamboo mapping in the forest is neglected by the public and there are only a few research conducted regarding bamboo. Thus, an assessment of the distribution of bamboo resources is necessary for the utilization of bamboo and aid in the development of bamboo product manufacturing. Bamboo is ranked second to rattan in economic importance in Peninsular Malaysia. The general objective of this study is to assess the capability of UPM-APSB's AISA airborne hyperspectral imaging sensor for bamboo mapping in the forest while the specific objectives are to identify, quantify and map out the distribution of natural bamboo growing areas in Berangkat F.R, Kelantan. A False Colour Composite (FCC) image the study area was used in the study. Sobel filtering was used to enhance the image. Spectral Angle Mapper (SAM) was then used to classify the bamboo species among other vegetative species within the Berangkat F.R. A thematic map of bamboo distribution was produced and the bamboo species was identified as *Gigantochloa scortechnii*. The areal extent of bamboo acreage in the study area was 2.12 ha. With an estimated bamboo culms of 4 009 at a mapping accuracy of 60%. Bamboo mapping using UPM-APSB's AISA airborne hyperspectral sensing has a great potential and should be integrated with a GISbased decision support system to support future decision making, development and utilization of bamboo by Kompleks Perkayuan Kelantan management.

Keyword: Mapping, Quantification, Airborne, Hyperspectral sensing, Spectral signature